

Doug Demko and Andrea Fuller

Comments on the Delta Science Program draft Independent Scientific Advisory Panel Report
March 4, 2019

- Biological Objectives
- Importance of Monitoring
- Hatchery Impacts
- *O. mykiss*



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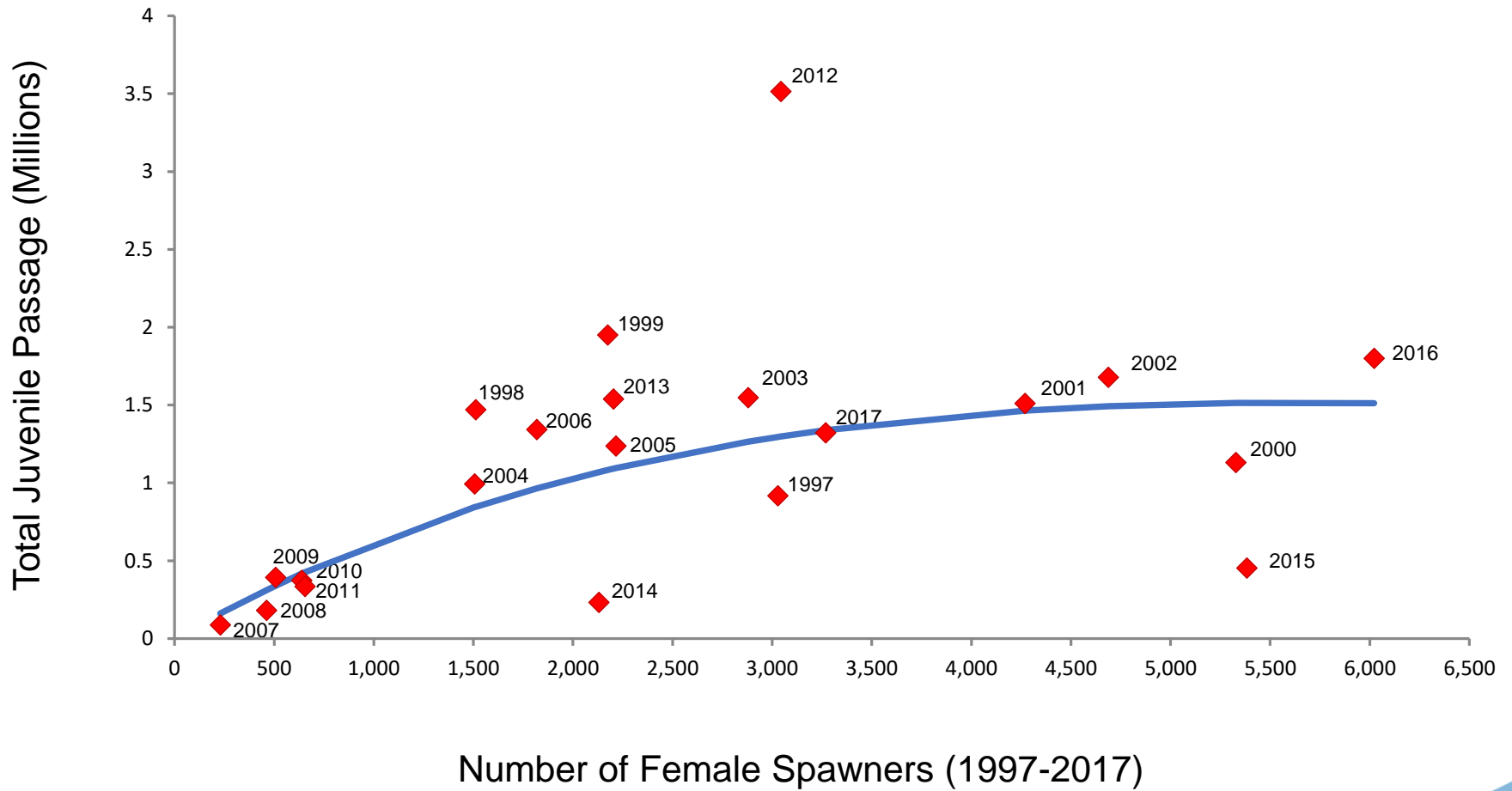
Background

- Appreciate opportunity to comment on behalf of San Joaquin Tributaries Authority (SJTA)
 - SJTA stakeholders began monitoring fish populations over 30 years ago
 - Believe long-term monitoring is foundation of science based management
 - Appreciate the Panel's recognition of importance of population monitoring
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Panel Report Provides Important Recommendations

- Importance of developing science based biological objectives
 - (preferably before establishing flow standards)
- Focus on native fishes over single species management
- Recognition of impacts of hatcheries on natural salmon populations
- Use long-term monitoring data to inform stock-recruitment models to assess both the productivity and carrying capacity of fish populations

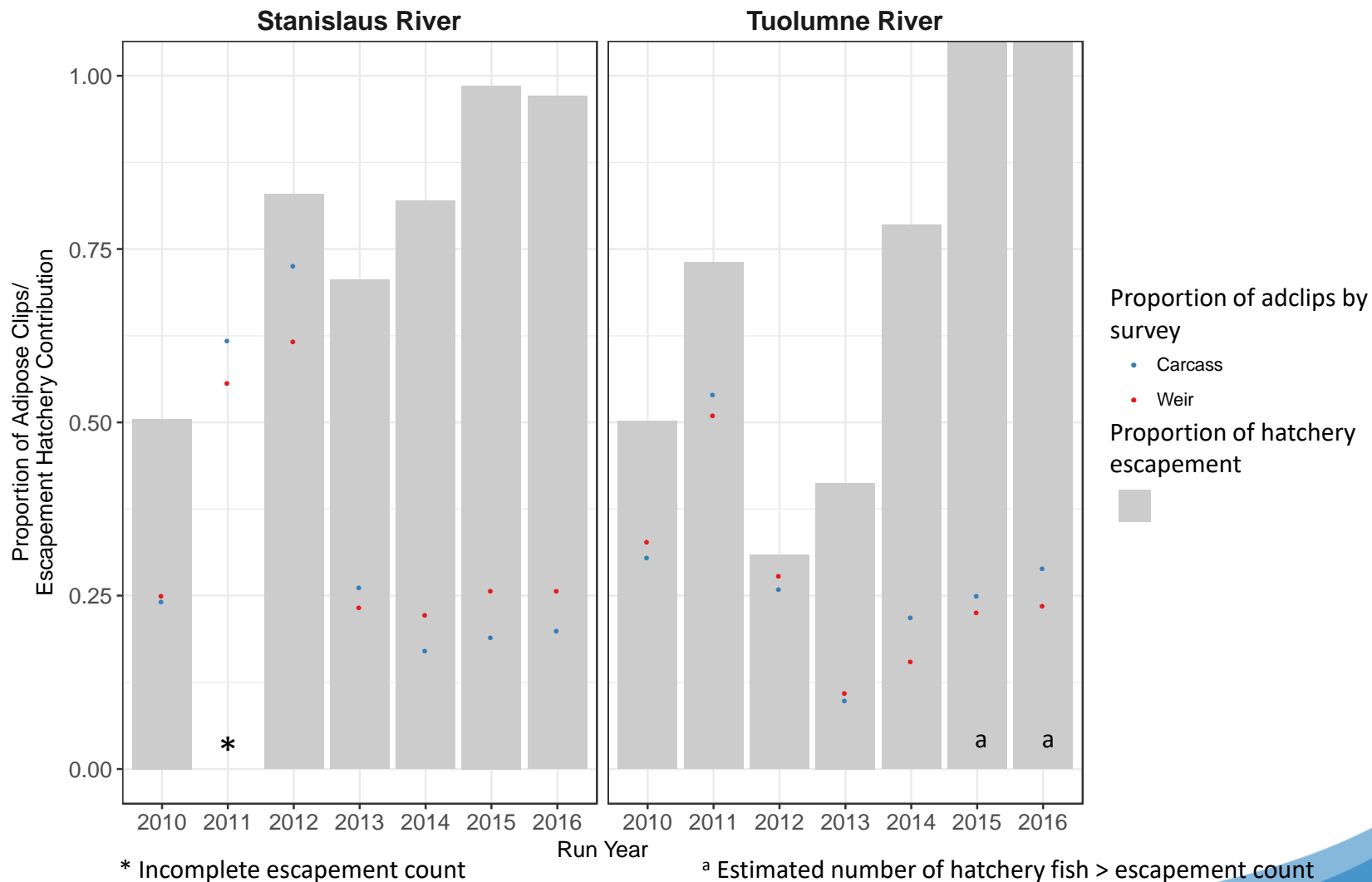
Stanislaus River Spawning and Juvenile Salmon Production



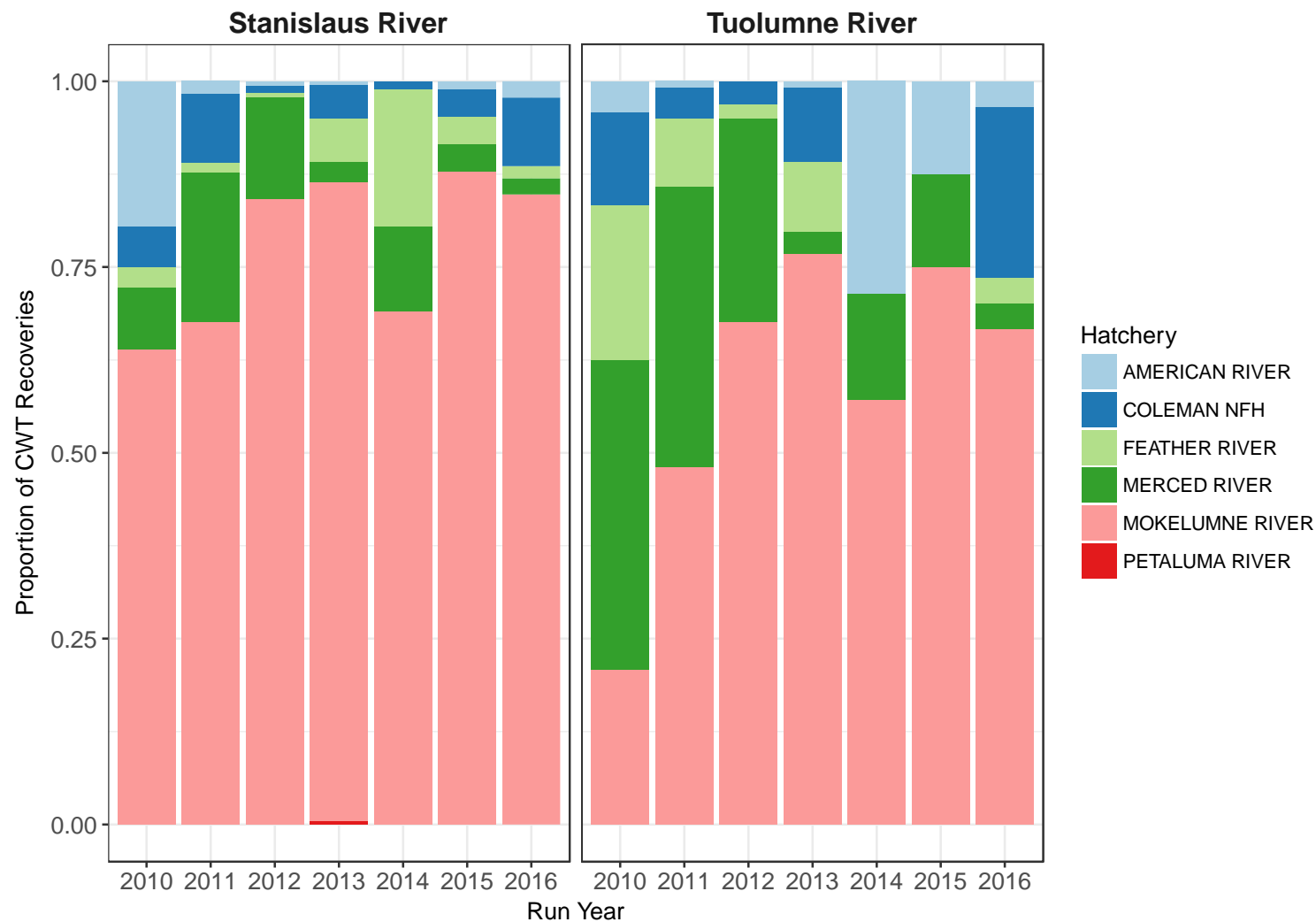
Stock-Recruitment Estimation for Biologically Justified Goals

- Agree, stock-recruitment is appropriate statistical methodology to assess the productivity and carrying capacity of fish populations
- However, SWRCB question of whether the AFRP doubling goals for each tributary could be used to calculate targets for outmigrant survival is worrisome
 - Singular focus on outmigrant survival as means for doubling
 - Ignores carrying capacity and productivity
- In 2016, Stanislaus River had 30-year record Chinook return at peak of 5-year record drought, but...
 - Still didn't meet CVPIA doubling goal of 22,000
 - Adult abundance exceeded carrying capacity in all drought years
 - More than 95% of adult returns were hatchery fish

High Rates of Hatchery Contribution in San Joaquin River Tributaries



Sources of Hatchery Strays in San Joaquin River Tributaries

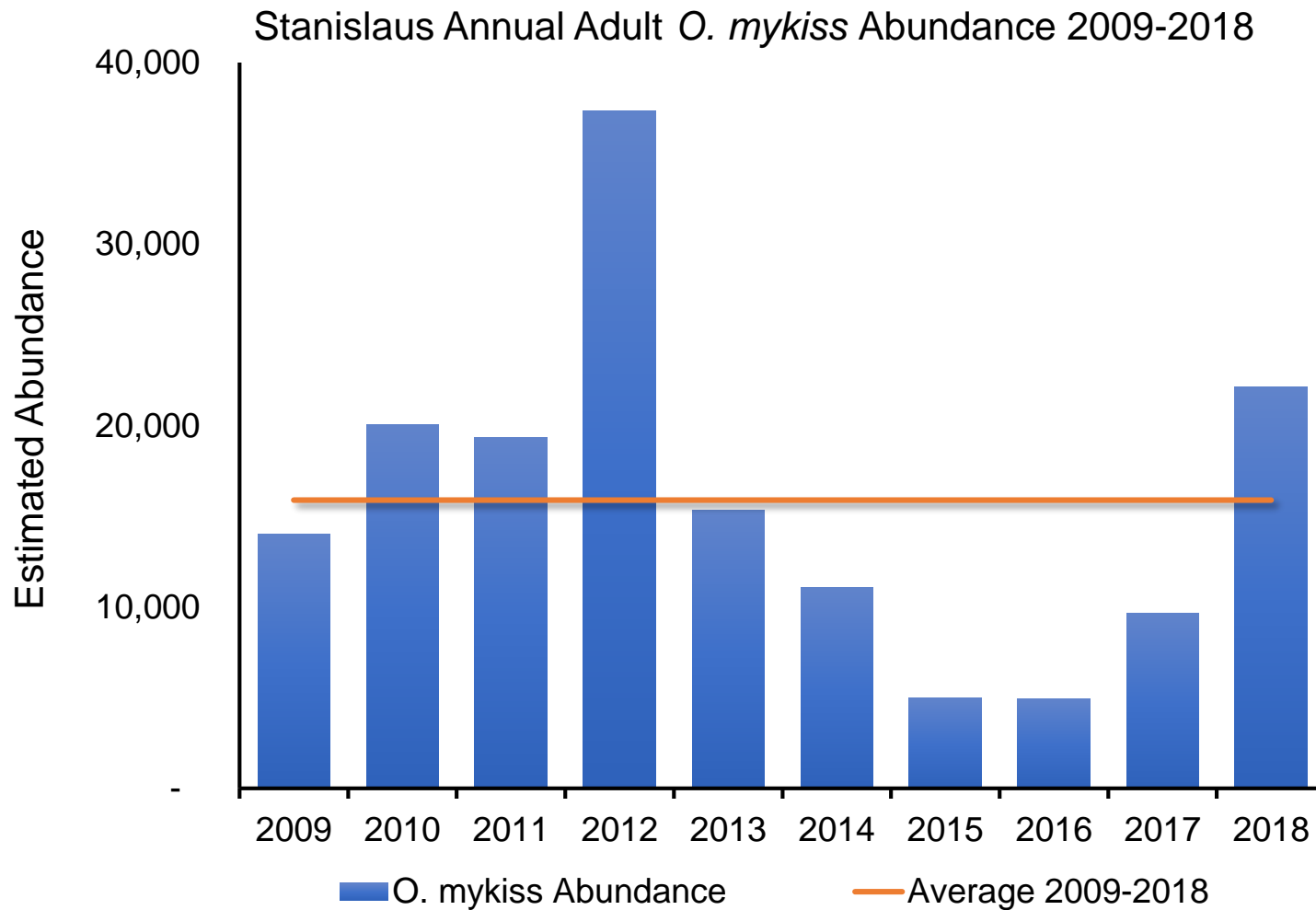


Improved Monitoring Requires Better Reporting

Stock-recruitment approach will require more robust data collection (age composition and hatchery contribution) and timely reporting of those data (2019 Developing Biological Goals for the Bay-Delta Plan)

- Benefits of monitoring programs are reduced if reporting is lacking
 - 2013 results from CFM program reported in fall of 2018
- Weir monitoring and CFM program can inform important real-time and long-term decision making
 - Need 100% fall-run hatchery juvenile marking for proper management
 - Also enables exclusion weirs, selective harvest, terminal fisheries

Importance of Understanding all Species and Life-stages




O. mykiss Monitoring

- Difficult task considering variable life history, rare ecotypes in certain locations, low detection and observation probability
- Basic monitoring of resident populations will inform life-history models
 - Resident populations much easier to monitor than anadromous component
 - Couple with genetic studies (e.g., *Omy5*) to better understand anadromy
- Weirs equipped with PIT tag antennas on CV tributaries
- Intensively monitor key watersheds
 - Active capture and re-sighting methods
 - Networks of passive antenna arrays
 - Data collected under appropriate statistical modeling framework to answer important questions about life history and migration patterns




Stanislaus Native Fish Plan

- 2009 - SSJID/OID first proposed studying predator suppression
 - 2016 - Congress passed law to enable research
 - Partnership between SSJID/OID and National Marine Fisheries Service
 - Securing sampling permits still challenging and time-consuming
 - Key objectives include:
 - Estimate abundance of native and non-native predators
 - Assess diet and age composition of predatory fishes
 - Evaluate Chinook salmon survival
- 



Thank You

- Appreciate thorough review and recommendations
 - Consider impacts of regulatory inefficiencies on monitoring effectiveness and overall efficiency
 - Encourage private-public monitoring/funding partnerships
 - SJTA members look forward to science based population goals, improved monitoring and reporting, better management tools
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